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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,891	10/10/2003	Arunabha Ghosh	1033-LB1019	7872
60533	7590	07/24/2007		
TOLER SCHAFFER, LLP 8500 BLUFFSTONE COVE SUITE A201 AUSTIN, TX 78759			EXAMINER WONG, LINDA	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 07/24/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/683,891	Applicant(s) GHOSH, ARUNABHA	
	Examiner Linda Wong	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16, 17, 20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 15, 18, 19 and 22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 17, 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 1, 7, 8 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Allowable Subject Matter

1. The indicated allowability of claims 1-18 is withdrawn in view of the newly discovered reference(s) to Kuchi (US Patent No.: 7065156). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1,7,8,14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi (US Patent No.: 7065156) in view of Goodings (US Publication No.: 20040013166).

a. **Claims 1,8,**

i. Kuchi discloses

- "transmitting a first copy of a signal from an antenna, the signal comprising a plurality of time-division multiple access (TDMA) frames" (Fig. 4, path comprising labels 208,406 and Col. 5, line 67 discloses the system can function in TDMA, Fig. 3b, labels 326a,326b show the different symbols or frames for transmission)
- "transmitting a second copy of the signal from the antenna, the second copy having a fixed delay and a random phase relative to the first copy

of the signal, wherein the random phase changes from one of the TDMA frames to another of the TDMA frames" (Fig. 4, path comprising labels 206,402,404, label 206 as the delay and label 402 as the random phase, Col. 3, lines 60-65 discloses "an incremental phase shift is used for each burst", Col. 4, lines 25-35 discloses the "offset block 206 causes an at least one symbol period delay in $X(t)$ to generate an offset version of $X(t)$ for $O(t)$." and Fig. 4 shows the first path that produces the first copy receives $X(t)$.)

- ii. Kuchi fails to disclose "the first copy of the signal and the second copy of the signal are transmitted using hopping carrier frequencies".
 - iii. Goodings discloses such a limitation. (paragraphs 5,8 discloses TDMA and frequency hopping system for transmitting signals.) It would have been obvious to one skilled in the art to incorporate frequency hopping as disclosed by Goodings into Kuchi's TDMA system as disclosed in Col. 5, line 65 – Col. 6, line 6 so to provide better voice quality and improved reliability.
- b. **Claim 7,14**, Kuchi discloses "forming the signal based on a speech signal by baseband channel coding and interleaving acts, a modulation act, and a pulse shaping act." (Fig. 1a, label 104)

Allowable Subject Matter

3. **Claims 16-17,20-21** are allowed over prior art.

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4. **Claims 2-6,9-13** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Linda Wong
7/16/2007


DAVID C. PAYNE
SUPERVISORY PATENT EXAMINER